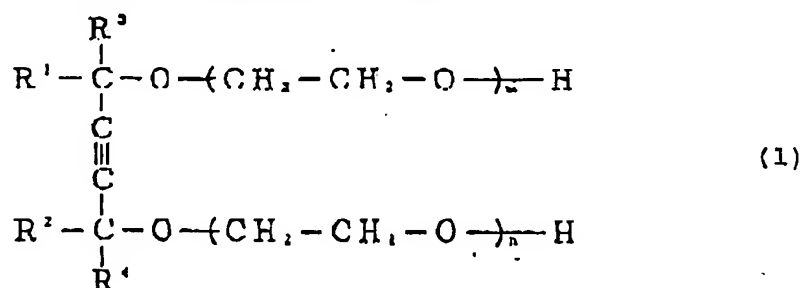U 013698-2

WHAT IS CLAIMED IS:

1.   An aqueous ink composition comprising at least water, a pigment dispersed by polymer, a sulfonyl group-containing (co)polymer, and an ultra-penetrating agent.

2.   The aqueous ink composition according to claim 1, wherein the sulfonyl group-containing (co)polymer is present in the form of an emulsion.

3.   The aqueous ink composition according to claim 1, wherein the sulfonyl group-containing (co)polymer is at least one of a diene-based, sulfonyl group-containing (co)polymer and a non-diene-based, sulfonyl group-containing (co)polymer.

4.   The aqueous ink composition according to claim 3, wherein the non-diene-based, sulfonyl group-containing (co)polymer is an acryl-based, sulfonyl group-containing (co)polymer.

5.   The aqueous ink composition according to claim 4, wherein the pigment dispersed by polymer is a pigment dispersed in an aqueous medium by an acrylic (co)polymer having an acid value of 100 or more.

6. The aqueous ink composition according to claim 1, wherein the ultra-penetrating agent is at least one compound selected from the group consisting of acetylene glycol compounds, acetylene alcohol compounds, and glycol ether compounds.

7. The aqueous ink composition according to claim 1, wherein the ultra-penetrating agent is a combination of a compound represented by the following formula (1) and triethylene glycol monobutyl ether:

$$R^1-\underset{\underset{\underset{R^2-\underset{R^4}{\overset{|}{C}}-O-(CH_2-CH_2-O)_n-H}{\overset{|}{C}}}{\overset{R^3}{\overset{|}{C}}-O-(CH_2-CH_2-O)_m-H}}{\overset{|}{\underset{C}{\overset{|||}{C}}}} \qquad (1)$$

wherein, $0 \le m + n \le 50$, and R^1, R^2, R^3 and R^4 each independently is an alkyl group.

8. A recording process comprising recording an image by an ink jet recording process using an aqueous ink composition according to claim 1.

9. An ink cartridge containing an aqueous ink composition according to claim 1.

10.   A recorded article having an image recorded by
an aqueous ink composition according to claim 1.